

Abstract

The present disclosure provides compositions and methods for reducing or inhibiting vascular inflammation, for example inflammation resulting from unstable blood flow conditions such as oscillatory shear. Representative compositions include an antagonist of BMPs, for example BMP4, or BMP receptors, for example BMPR-I and/or BMPR-II, in an amount sufficient to for inhibiting or reducing vascular inflammation by interfering with binding of bone morphogenic protein or a fragment thereof to bone morphogenic protein receptors. Exemplary BMP antagonists include polypeptides having an eight-, nine-, or ten-membered ring cystine knot structure. Representative BMP antagonists include, but are not limited to the CAN family of proteins, the chordin family that includes chordin and ventroptin, and noggin.